

WHAT IS CLAIMED IS:

1. A method for separating nucleic acids, wherein nucleic acids are separated and purified from a sample containing nucleated cells, comprising:

5           1) a step of bringing the sample containing nucleated cells into contact with a lysis solution containing at least a cellular component-degrading enzyme and a surfactant,

          2) a step of bringing the sample containing  
10   nucleated cells into contact with a water-insoluble solid-phase carrier having an average particle size of 0.01 to 1000  $\mu\text{m}$  in the presence of a water-soluble organic solvent to adsorb and bind nucleic acids released from the nucleated cells onto the surface of the solid-phase  
15   carrier, and

          3) a step of separating the solid-phase carrier from the sample.

2. The method for separating nucleic acids according to claim 1, wherein the cellular component-degrading enzyme is at least one enzyme selected from the  
20   group consisting of amylase, lipase, protease, and nuclease.

3. The method for separating nucleic acids according to claim 1, wherein the surfactant is an anionic  
25   surfactant.

4. The method for separating nucleic acids according to claim 1, wherein the water-insoluble solid-phase carrier comprises at least one compound selected from the group consisting of polystyrene, polypropylene, polyacrylates, polymethyl methacrylate, polyethylene, polyamides, glass, silica, silicon dioxide, silicon nitride, zirconium oxide, aluminum oxide, and zinc oxide.

5. The method for separating nucleic acids according to claim 1, which further comprises 4) a step of washing the separated solid-phase carrier.

6. The method for separating nucleic acids according to claim 1, which further comprises 5) a step of eluting the nucleic acids adsorbed onto the solid-phase carrier.

7. A nucleic acid-extracting reagent kit for separating and purifying nucleic acids from a sample containing nucleated cells, comprising at least a cellular component-degrading enzyme, a water-insoluble solid-phase carrier, a surfactant and a water-soluble organic solvent.